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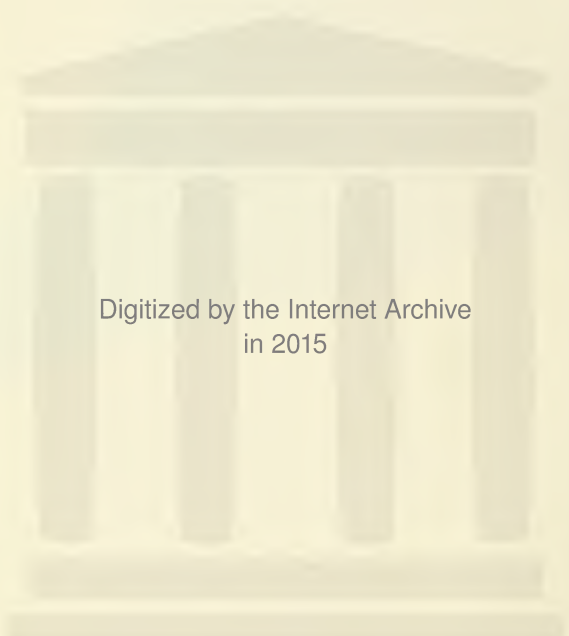
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SOUTHERN CROSSING

OF SAN FRANCISCO BAY



DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS
DEPARTMENT OF PUBLIC WORKS
STATE OF CALIFORNIA

SUPPLEMENT TO
REPORT OF DECEMBER 1955

A SUPPLEMENT
TO THE
REPORT OF DECEMBER 1955
TO
DEPARTMENT OF PUBLIC WORKS
ON THE
S O U T H E R N C R O S S I N G
OF
SAN FRANCISCO BAY

COVERING PROPOSED APPROACH AMENDMENTS
TO ASSEMBLY BILL NO. 3249
AS OUTLINED IN ASSEMBLY JOURNAL
FOR MARCH 23, 1955, AT PAGE 1704

March 1956

Division of San Francisco Bay Toll Crossings
Department of Public Works
State of California

STATE OF CALIFORNIA

Goodwin J. Knight
Governor

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[Dec. 1955
Supplement]

DEPARTMENT OF PUBLIC WORKS

Frank B. Durkee
Director

DIVISION OF SAN FRANCISCO BAY TOLL CROSSINGS

N. C. Raab
Projects Engineer



STATE OF CALIFORNIA

Department of Public Works

SACRAMENTO

March 1, 1956

Honorable Goodwin J. Knight
Chairman and Members of the
California Toll Bridge Authority
Sacramento, California

Gentlemen:

Transmitted herewith is a supplement to the report of December 1955 on the Southern Crossing of San Francisco Bay covering the studies made on the proposed approach amendments as described and outlined in the Assembly Journal for March 23, 1955, at page 1704. Included in the report is an estimate of costs for the crossing and its approaches.

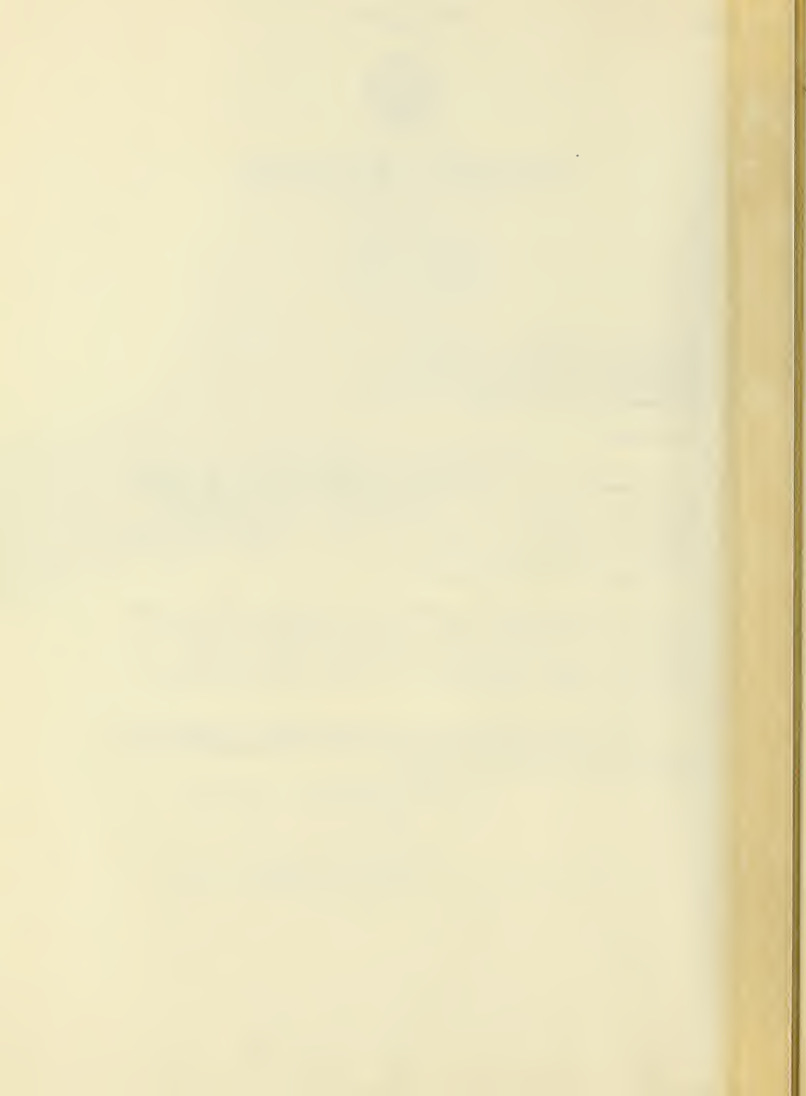
The report was authorized by Section 30652 of the Streets and Highways Code and was prepared by the Department of Public Works, Division of San Francisco Bay Toll Crossings, pursuant to the Resolution of the Authority adopted December 13, 1955, and my directive of December 21, 1955.

It is recommended that the Department be authorized to file copies of the report with the Legislature, and appropriate committees thereof.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Frank B. Durkee".

FRANK B. DURKEE
Director of Public Works



STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

Division of San Francisco Bay Toll Crossings

2054 UNIVERSITY AVENUE
BERKELEY 4, CALIFORNIA

March 1, 1956

PLEASE REFER
TO FILE NO.

Honorable Frank B. Durkee
Director of Public Works
Sacramento, California

Dear Sir:

In compliance with your directive of December 21, 1955, we have made a study of the proposed amendments to the approach system of the Southern Crossing as described and outlined in the Assembly Journal for March 23, 1955, at page 1704.

It is my pleasure to submit herewith our report, a Supplement to the Southern Crossing Report of December 1955, covering these studies.

Respectfully submitted,



N. C. RAAB
Projects Engineer and
Chief of Division

TABLE OF CONTENTS

		<u>Page</u>
PART I	INTRODUCTION	I-1
	Scope	I-1
	History of Approach Amendments	I-1
	Authority for Supplemental Report	I-3
	Freeway Standards	I-3
PART II	SAN FRANCISCO APPROACHES	II-1
	Embarcadero Approach	II-2
	Third and Army Interchange	II-2
	Six-Lane Embarcadero Approach	II-2
	Connections to City Streets	II-3
	Bayshore Freeway Approach	II-4
PART III	EAST BAY APPROACHES	III-1
	Eastshore Freeway Approach	III-1
	Alameda Approach	III-1
	Southshore Freeway	III-1
	Main-Atlantic Freeway	III-2
PART IV	TRAFFIC AND REVENUE	IV-1
	Scope	IV-1
	San Francisco Approaches	IV-1
	Embarcadero Approach	IV-1
	Bayshore Freeway Approach	IV-3
	Summary	IV-3
	East Bay Approaches	IV-4
	Alameda Approach	IV-4
	Summary	IV-5
	Conclusion	IV-6
PART V	CONCLUSIONS	V-1
APPENDIX		
A	Text of Proposed Amendments to Assembly Bill No. 3249	Append-1

LIST OF FIGURES

<u>Figure No.</u>	<u>Title</u>	<u>Following Page No.</u>
	PART II - SAN FRANCISCO APPROACHES	II-5
II-1	Embarcadero Approach - General Plan and Elevation	
II-2	Bayshore Freeway Approach - General Plan and Elevation	
II-3	Embarcadero Approach - General Plan and Elevation - Via Fourth and Townsend Streets	
II-4	Embarcadero Approach - General Plan and Elevation - Via China Basin	
II-5	Bayshore Freeway Approach - General Plan	
	PART III - EAST BAY APPROACHES	III-2
III-1	Eastshore Freeway Approach - General Plan	
III-2	Alameda Approach - General Plan	
III-3	Alameda Approach - General Plan (with proposed changes)	
	PART V - CONCLUSIONS	V-3
V-1	Estimated Cost of Construction, with Approaches per Art. 2, Chap. 2, Div. 17, Streets & Highways Code	
V-2	Estimated Costs, with Approaches per Proposed Amendments, Assembly Journal of March 23, 1955	

PART I

INTRODUCTION

SCOPE

This report, a Supplement to the Southern Crossing Report of December 1955, has been prepared to summarize the engineering and cost studies made for the proposed changes in the approach system of the Southern Crossing. These changes outlined in the Assembly Journal for March 23, 1955, at page 1704, were presented as proposed amendments to Assembly Bill No. 3249 (Chapter 304, Statutes of 1955). (See Appendix A.)

HISTORY OF APPROACH AMENDMENTS

In December 1954, this Division submitted to the Department of Public Works a "Progress Report " on the engineering work accomplished on the Southern Crossing to that date.

In January 1955 a meeting of the Assembly Committee on Conservation, Planning and Public Works was held to discuss changes in the then present Southern Crossing law, (Chapter 1056, Statutes of 1953.) In attendance were representatives from the Bay Area and from the Department of Public Works. At this meeting the Department requested that several technical and clarifying amendments be made to the existing law. An agreement was reached whereby these proposed amendments would be introduced in the Legislature and any additional legislation

with respect to alterations in the approaches would be handled by separate bills.

However, when Assembly Bill No. 3249 incorporating the amendments requested by the Department was introduced in the Legislature it was proposed that a series of amendments concerning alterations to the approaches be made thereto. The bill was referred back to the Committee on Conservation, Planning and Public Works, where a subcommittee was appointed to study these new proposals. After several subcommittee meetings it was decided that no action should be taken on the matter of approach amendments until the report covering estimated costs of financing and constructing the entire crossing project was released at the end of the year. The proposed approach amendments were printed in the Assembly Journal for March 23, 1955 as a matter of record. Assembly Bill No. 3249 was passed and signed into law as Chapter 304, Statutes of 1955, without the amendments.

To insure that these proposed approach amendments would be studied after the release of the December 1955 Report, Chapter 304, Statutes of 1955 provided, in part, as follows:

"After the completion of a report including an estimate of costs of financing and constructing the Southern Crossing and its approaches as described in this article, the department may use any funds available to it from the proceeds of any bonds issued under this article by the Authority for the additional purpose of studying revisions in the approach system as described and outlined in the Assembly Journal for March 23, 1955, at page 1704."

AUTHORITY FOR SUPPLEMENTAL REPORT

Authority to make these additional studies and to issue a report on the proposed approach amendments is contained in, (1) the aforementioned amendment to the original bill, (2) the resolution passed by the California Toll Bridge Authority on December 13, 1955, which accepted the Division's Report of December 1955, and at the same time directed the Department to continue with the studies on the approach amendments as outlined in the Assembly Journal, and (3) the directive, dated December 21, 1955, by the Director of Public Works to the Division to proceed with the work. A report of which should be submitted to the Authority prior to the opening of the 1956 Budget Session of the Legislature of the State of California.

FREEWAY STANDARDS

The following set of standards were used in designing the Southern Crossing as presented in the Report of December 1955:

- (1) Grades on freeways -- not to exceed 3-1/2 percent.
- (2) Minimum radius of curvature on freeways -- not less than 1,150 feet.
- (3) Grades on connections to city streets -- not more than 6 percent.

In this supplemental report alterations to the approaches, as suggested by the amendments, were designed to conform with above standards so that a basis of comparison would exist.

P A R T I I
S A N F R A N C I S C O A P P R O A C H E S

The San Francisco Approaches to the Southern Crossing as required by the Statutes and described in the December 1955 Report were divided into two main sections: (1) the Embarcadero Approach, and (2) the Bayshore Freeway Approach. (See Figures II-1 and II-2.)

The proposed amendments to the Statutes would result in revisions to these Approaches as shown on Figures II-3, II-4, and II-5.

The Embarcadero Approach extends from the bridgehead northerly to the downtown business and waterfront districts along two possible routes. (See Figures II-3 and II-4.) It consists of the following components:

- (a) The Third and Army Interchange.
- (b) A six-lane freeway extending northward from the Interchange to a connection with the Embarcadero Freeway at Howard Street.
- (c) Connections to the city streets.

The Bayshore Freeway extends southwesterly from the Third and Army Interchange to a connection with the Bayshore Freeway in the vicinity of Alemany Boulevard. (See Figure II-5.) It consists of the following components:

- (a) A six-lane freeway, (the Southern Freeway).
- (b) Connections to the Bayshore Freeway.

EMBARCADERO APPROACH

Third and Army Interchange

This interchange will collect and distribute traffic to and from the Southern Crossing, the Southern Freeway, and city streets. The Interchange differs from that previously described in that the westerly legs have been shifted in a southerly direction to connect with the Southern Freeway. Figure II-3 shows this new alignment.

Six-Lane Embarcadero Approach

The Approach extending northward from the Interchange to the Embarcadero Freeway would provide for six lanes of traffic on an elevated, double-decked structure. For purposes of description it consists of three sections:

- (a) Approach along Tennessee and Third Streets, extending from 23rd Street to Fourth Street.
- (b) Approach from the intersection of Third and Fourth Streets to the intersection of Townsend and The Embarcadero.
- (c) Approach along The Embarcadero from Townsend Street to a connection with the Embarcadero Freeway at Howard Street.

The first section of the Approach, along Tennessee and Third Streets, differs from previous routes in that the proposed amendments specify that connections should be made to city streets at "Third Street between 16th Street and 20th Street," instead of at 19th Street. The proposed connections and alignment are shown on Figures II-3 and II-4.

The second section of the Approach, from the intersection of Third and Fourth Streets to Townsend Street and The Embarcadero, has three possible routes as suggested by the proposed amendments. They are as follows:

- (a) A freeway with "a high-level bridge 135 feet above China Basin." This is in accordance with the existing Statute except six lanes would be provided in lieu of four lanes. (See Figure II-1.)
- (b) A freeway with "a high-level bridge above China Basin." The clearance over China Basin is left open to engineering judgement. Figure II-4 shows a clearance of 150 feet above the waterway.
- (c) A freeway with "a low-level fixed bridge across the Channel Street waterway in the vicinity of Fourth Street." This proposal would eliminate the high-level crossing of China Basin. Figure II-3 shows the freeway routed via Fourth and Townsend Streets. The crossing over the Channel Street waterway provides for a clearance of 35 feet above M.H.H.W.

The third section, along The Embarcadero between Townsend and Howard Streets, will be six lanes instead of four as previously presented.

Connections to City Streets

In accordance with the proposed amendments to the existing statutes connections to city streets would be provided at the following points: (See Figures II-3 and II-4.)

<u>Intersection</u>	<u>Type of Connection</u>
Army Street	Transbay on- and off-ramps
23rd Street	Transbay on- and off-ramps
19th Street	Northbound off-ramp
18th Street	Northbound on-ramp
Mariposa Street	Southbound on-ramp
16th Street	Southbound off-ramp
Fourth and Brannan	Southbound on-ramp
Third and King	Northbound off-ramp
Mission and The Embarcadero*	Northbound off-ramp
Howard and The Embarcadero*	Southbound on-ramp
Spear and Harrison**	Southbound on-ramp
Main and Harrison**	Northbound off-ramp

*A six-lane freeway, by either of the two possible routes to the Embarcadero Freeway, would eliminate connections to city streets in the vicinity of Mission and Howard Streets on The Embarcadero.

**Ramp connections to city streets in the vicinity of Harrison will be eliminated if the height of the China Basin crossing exceeds 135 feet.

BAYSHORE FREEWAY APPROACH

The Bayshore Freeway Approach presented herein is on an entirely different alignment from that described in our previous reports. The proposed amendment reads in part, "a freeway connection with Bayshore Freeway in the vicinity of Alemany Boulevard ---, or such portion thereof running southwesterly from the vicinity of Army Street as can be constructed for the same cost as would apply to a freeway connection with Bayshore Freeway in the vicinity of 26th Street."

The Southern Freeway planned by the City of San Francisco would provide a six-lane double-decked connection between the

Third and Army Interchange and Bayshore Freeway at Alemany Boulevard. Since this freeway is in accord with the proposed amendment and this Division is in general agreement with the planned structure type and location, the layout and cost estimates presented herein for the Bayshore Freeway Approach were prepared from material made available to the Division by the Department of Public Works, City and County of San Francisco. (See Figure II-5.)

This Approach (Southern Freeway) will provide direct connections for traffic to and from the south on Bayshore Freeway and for traffic to and from the west via the extension of the Southern Freeway proposed by the Division of Highways.

Southern Crossing traffic wishing to travel northward via the Bayshore Freeway can do so by using Army Street from Third Street and the existing Army-Bayshore Interchange.

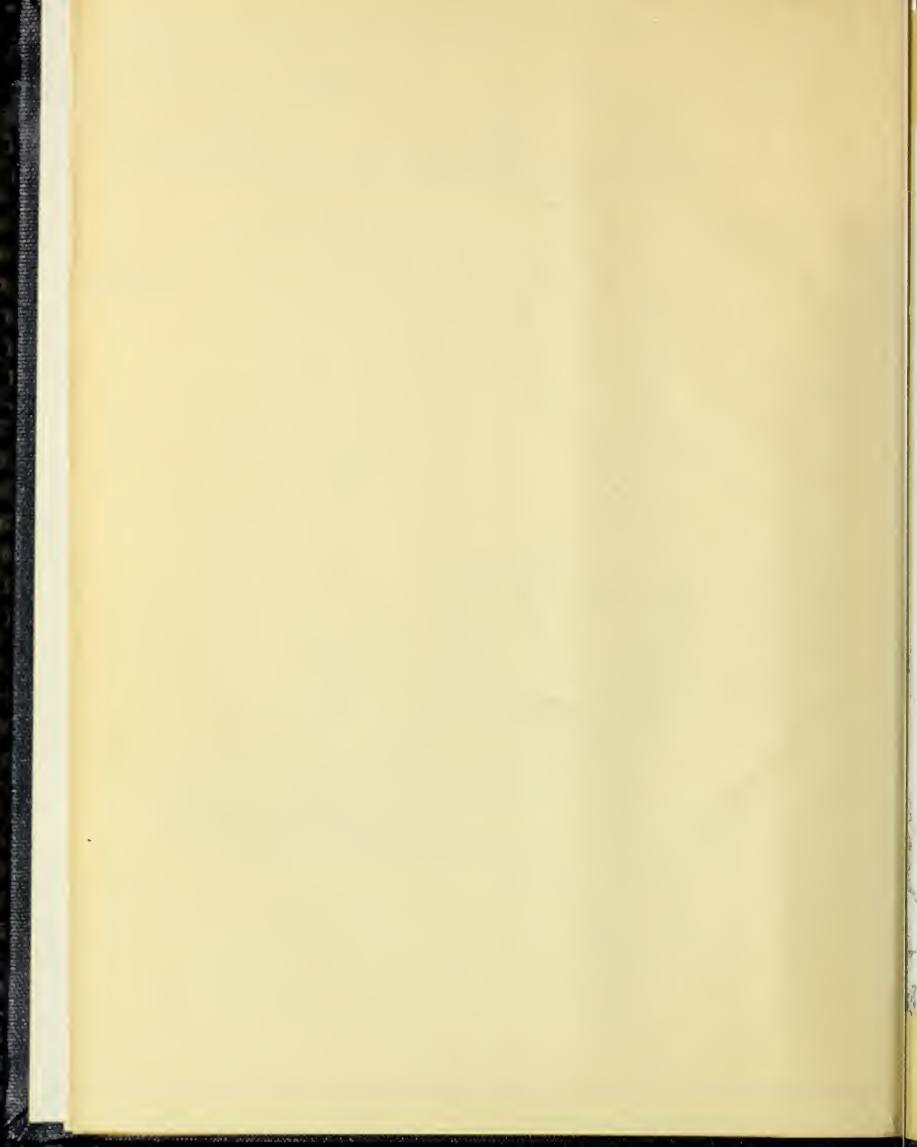
WENTY SECOND

STREET

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BAYSHORE - ARMY INTERCHANGE

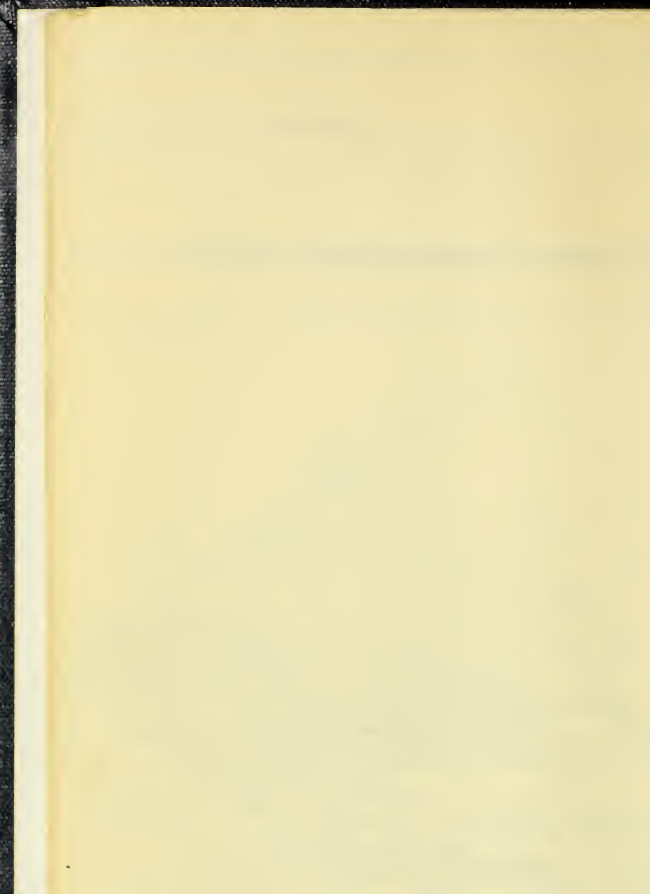




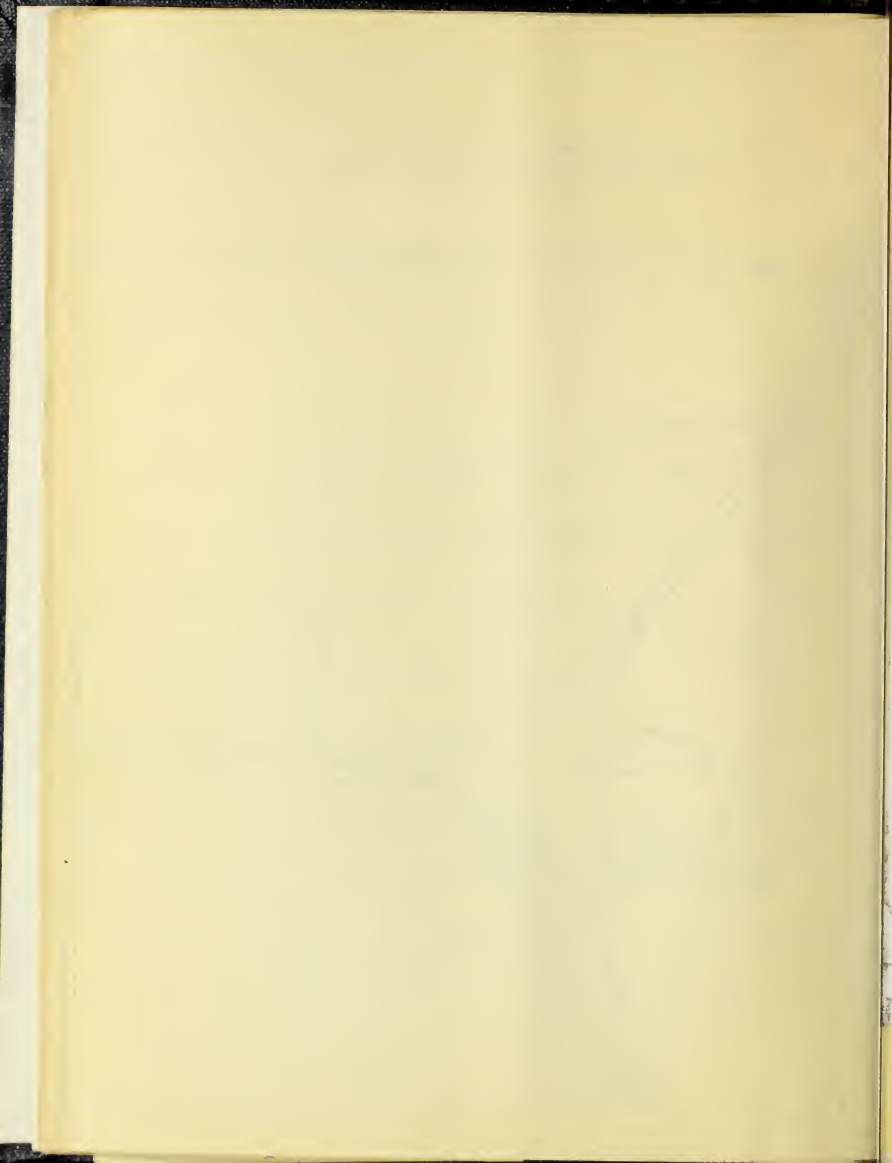
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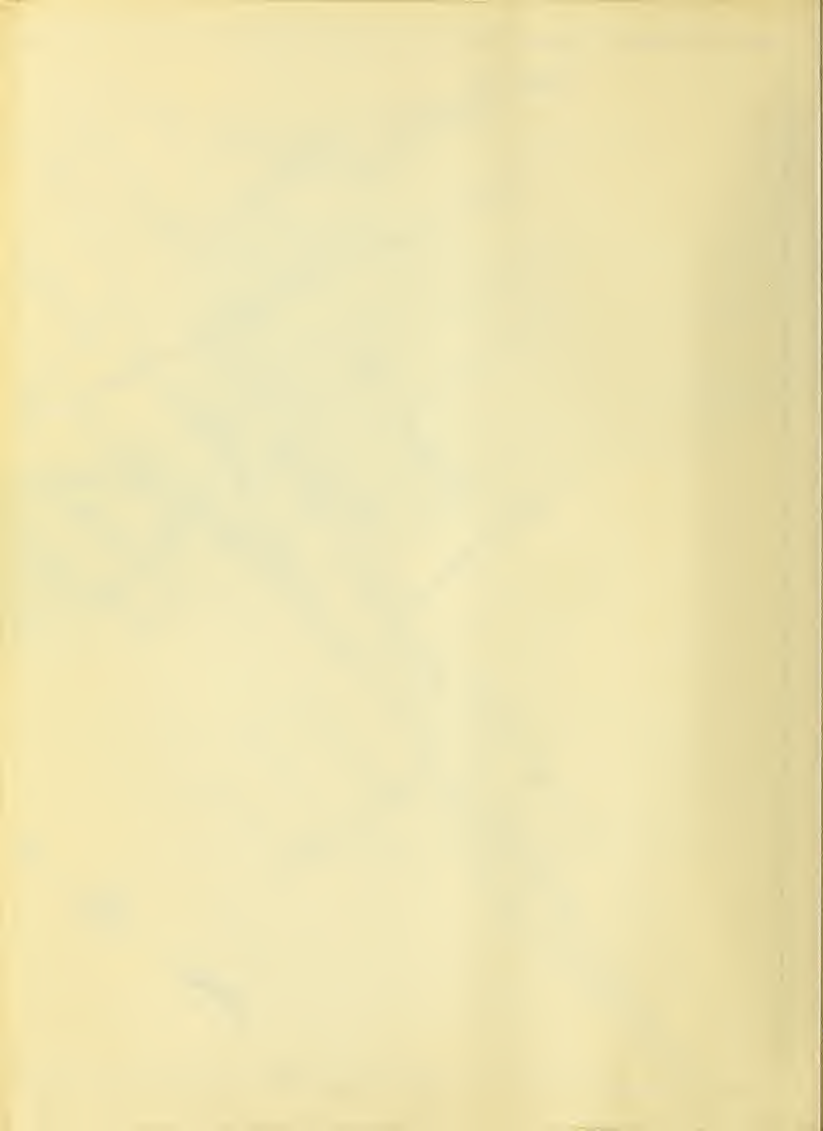


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P A R T I I I
E A S T B A Y A P P R O A C H E S

The East Bay approach system to the Southern Crossing specified by the Statutes and described in the December 1955 Report was divided into two main sections: (1) the East-shore Freeway Approach, and (2) the Alameda Approach. (See Figures III-1 and III-2.)

EASTSHORE FREEWAY APPROACH

The proposed amendments would make no changes to this portion of the East Bay approach system.

ALAMEDA APPROACH

The Alameda Approach as described in the earlier reports is shown on Figure III-2 and with changes in accordance with the proposed amendments on Figure III-3.

Southshore Freeway

The proposed amendments would change this section of the Alameda Approach only as to connections to the city streets.

One of the amendments specified an interchange "at or near the northerly end of the bridge connecting Bay Farm Island with the City of Alameda." In previous reports connections at this location provided for movements to and from the bridge only. Figure III-3 shows additional ramp connections at Otis Drive which provide for complete interchange movements.

This bridge, as mentioned in our previous reports, was not constructed to freeway standards. Therefore, because of reduced speeds, 30-35 miles per hour, required for its use, the curve on the Freeway adjacent to the northerly end of the bridge does not conform to the full freeway standards mentioned earlier in this report.

The proposed amendments would (1) add an interchange and connection with the prolongation of Broadway Street, and (2) an interchange and connection with the southerly end of Eighth Street in lieu of Webster Street. Figure III-3 shows these designated connections with simple diamond-type interchanges.

Main-Atlantic Freeway

For this portion of the Alameda Approach two amendments were proposed specifying that interchanges be provided at (1) the intersection of Main Street and Atlantic Avenue, and (2) the intersection of Atlantic Avenue and Webster Street.

No action was taken on the first of the proposed amendments because an interchange had already been provided for at the designated location. (See Figure II-2.)

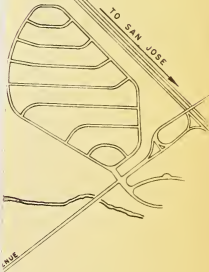
In accordance with the second amendment additional ramps have been provided at (1) an off-ramp from the viaduct to connect with Webster Street and (2) an on-ramp to the viaduct via Wadsworth Street. (See Figure III-3.)

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FORM 2



ER - EASTSHORE
FREEWAY
INTERCHANGE



STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO BAY TOLL CROSSINGS

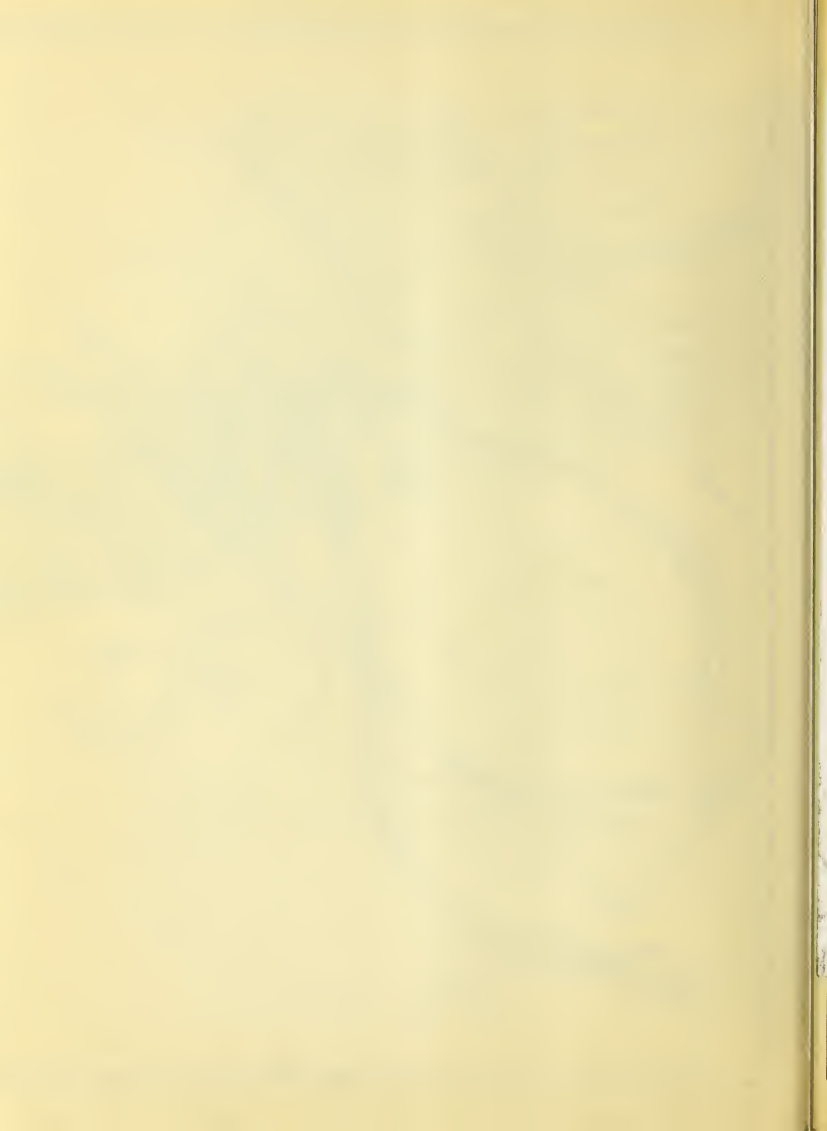
SOUTHERN CROSSING

EASTSHORE FREEWAY APPROACH GENERAL PLAN

0 500 1000 2000
SCALE IN FEET

TO S...
SOUTHERN CROSSING

ground
2.90 at Potrero Point
1000 = USC & G.S.
Datum of 1929
3.40 at Potrero Point



FOLDOUT

FIG. VI-8 OF DECEMBER 1955 REPORT

NOTE

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Multiply distances
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stances.
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U.S.C.G.S. Sea Level
1929
of Polero Point

DRO

ARM ISLAND

STATE OF CALIFORNIA
ARTMENT OF PUBLIC WORKS
IN FRANCISCO BAY TOLL CROSSINGS

SOUTHERN CROSSING
ALAMEDA APPROACH
GENERAL PLAN

0 500 1000 1500
SCALE IN FEET



Proposed Webster
Street Tube

Distances
to Coordinate
by distances
obtain

Point
55 Sea Level
Point

M ISLAND

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
SAN FRANCISCO BAY TOLL CROSSINGS

SOUTHERN CROSSING
ALAMEDA APPROACH
GENERAL PLAN

0 500 1000 2000
SCALE IN FEET



P A R T I V
T R A F F I C A N D R E V E N U E

SCOPE

The California Toll Bridge Authority resolution of December 13, 1955, which accepted the Division's report of December 1955, authorized the Director of Public Works to continue the employment of the firm of Coverdale and Colpitts, Consulting Engineers. The Division requested that this firm advise on traffic and revenue of the Southern Crossing with respect to the proposed approach amendments. These amendments relate particularly to the Embarcadero and Bayshore Freeway Approaches in San Francisco and to the Alameda Approach section of the East Bay approach system. They report as follows:

SAN FRANCISCO APPROACHES

Embarcadero Approach

There are two proposals for the Embarcadero Approach. The first is that shown on Figure II-3 in which the Approach extends via Tennessee Street and Fourth Street to the vicinity of Townsend Street with a low-level fixed crossing of the Channel Street waterway, then via Townsend Street to The Embarcadero and continuing along The Embarcadero, with a connection at Harrison Street with Main and Spear Streets, to a point near Mission Street where a junction is made with the California Division of Highways Embarcadero Freeway.

The approach to the Southern Crossing from the Main and Spear Street ramps or from The Embarcadero and Mission Street junction is only 0.16 of a mile longer and would take only 0.2 minutes more than the Embarcadero Approach as specified by Statute. This change is minor and in our opinion will have only a small effect traffic-wise relative to the use of the Bay Bridge and the Southern Crossing; however, the alignment over China Basin is more direct and would be favored by the traveling public if freeway standards could be maintained with connections to Harrison Street.

The second location proposed for the Embarcadero Approach is generally similar to that shown in the December 1955 Report except that the high-level bridge over China Basin is to be raised to obtain a clearance of 150 feet instead of 135 feet above the waterway, which height precludes the practicability of making a connection with Main and Spear Streets at Harrison Street. These connections serve an important traffic generating and terminating area in the City of San Francisco, and the elimination thereof would in our opinion reduce the volume of traffic that would be diverted from the Bay Bridge to the Southern Crossing. Based on the distribution of traffic shown in our previous report we estimate that this reduction in Southern Crossing traffic would amount to about 600 passenger vehicles per day at the 1954 level. This volume raised to the 1962

level is about 875 per day, about 4.2 percent of total Southern Crossing traffic. Vehicles which would use the Main and Spear Street ramps at Harrison Street, if these were available, would be obliged to use the ramps at Third and King Streets and Fourth and Brannan Streets, increasing the trip time about 2.3 minutes.

Bayshore Freeway Approach

The amendments propose the elimination of the Army Freeway, with its connection to Bayshore, and the substitution of the Southern Freeway connecting Bayshore with Third and Army Streets. However, there are certain vehicular movements from the north that would require the use of Army Street for access to the Southern Crossing, and for these vehicles we estimate the increase in time involved to be about one minute. The decrease in the number of vehicles diverted from the Bay Bridge to Southern Crossing would be about 350 per day at the 1954 level or about 2.5 percent of the estimated average daily traffic on the Southern Crossing in 1954 if it were then in operation. At the 1962 level this would amount to about 500 vehicles per day.

Summary

Part V of this Report states that the cost of the San Francisco Approaches would be increased from \$54,540,000, as estimated in the December 1955 Report, to \$58,720,000 if

the Embarcadero Approach is to take the location of Figure II-3 by way of Fourth and Townsend Streets with the Alemany connection in accordance with proposed amendment. If the Embarcadero Approach is to involve the 150-foot high-level bridge over China Basin, as shown in Figure II-4, the cost would be \$63,660,000 including the Alemany connection as compared with the previous estimate of \$54,540,000. Thus there is an increase in estimated cost of \$4,180,000 in one case and \$9,120,000 in the other.

EAST BAY APPROACHES

Alameda Approach

We observe that the suggested changes in the Alameda Approach primarily relate to the provision of (1) a full interchange between the Southshore Freeway and Otis Drive near the north end of the existing Bay Farm Island Bridge, as compared with the previously proposed directional interchange at this point which would only serve traffic to and from the south on the Freeway, (2) a full interchange between the Southshore Freeway and an extension of Broadway where none was provided before, (3) a full interchange between the Southshore Freeway and an extension of Eighth Street where previously only a directional interchange for traffic to and from the south on the Freeway had been proposed by means of an extension of Webster Street, and (4) the provision of a complete interchange at Webster Street and Atlantic Avenue,

when only a directional interchange to or from the north for Webster Street and Posey Tube traffic was provided previously. We observe that access to the proposed Webster Street Tube is still to be by way of Webster Street and the Main-Atlantic Freeway.

If a freeway approach were to be located so as to provide a direct connection between Southshore Freeway and the entrance to the proposed Webster Street Tube generally by way of Eighth Street, we estimate that the transbay trip via the Southern Crossing to or from the entrance of the Webster Street Tube would be reduced by 1.2 miles with a saving in time of about one and a half minutes, thus tending to increase the diversions to the Southern Crossing.

Summary

In our opinion, the provision of the complete interchange at the foot of Broadway, the change in the location of the connection between the Southshore Freeway to Alameda from Webster Street to Eighth Street, and the substitution of a complete interchange at Atlantic and Webster Streets will not materially affect the diversions to the Southern Crossing from the Bay Bridge.

The suggested changes in the Alameda Approach increase its cost \$990,000 above the costs estimated in the December 1955 Report.

CONCLUSION

It is our opinion that the proposed amendments to the approaches would not result in an increase in traffic to offset the additional cost involved in the construction.

As shown in the December 1955 Report the margin of available earnings over the debt service requirements in the case of a \$250,000,000 bond issue is narrow, and any material increase in the bonded indebtedness over this amount would probably require an increase in the basic passenger car toll over the 35 cents estimated as necessary for the complete project as defined by Chapter 1056, Statutes of 1953, and as amended by Chapter 304, Statutes of 1955.

P A R T V
C O N C L U S I O N S

The proposed approach amendments as described and outlined in the Assembly Journal for March 23, 1955, have been studied and reported on herein. In presenting this Supplement to the Southern Crossing Report of December 1955, the following conclusions can be made:

1. SAN FRANCISCO APPROACHES
Via Fourth and Townsend Streets
See Figure II-3

Major changes that have been made from the earlier report are:

- (a) All freeways are a minimum of six lanes divided.
- (b) Elimination of Army Freeway.
- (c)

Embarcadero Approach	\$42,650,000
With Alemany Connection	58,720,000
Cost in 1955 Report	54,540,000

2. SAN FRANCISCO APPROACHES
Via High-Level Structure Over China Basin
See Figure II-4

Major changes that have been made from the earlier report are:

- (a) All freeways are a minimum of six lanes divided.
- (b) Eliminate Army Freeway.
- (c) Structure clearance over China Basin 150 feet instead of the 135 feet previously proposed.

- (d) The Spear and Main Streets "on" and "off" ramps to Harrison Street eliminated due to excessive grades.

(e) Embarcadero Approach	\$47,590,000
With Alemany Connection	63,660,000
Cost in 1955 Report	54,540,000

3. TRANSBAY SECTION

Via Third and Army Streets and Bay Farm Island

No proposed amendments to the Statutes were suggested for the main crossing.

4. EAST BAY APPROACHES

Via Eastshore Approach and Alameda Approach

See Figure III-3

No proposed amendments to the Statutes were suggested for the Eastshore Freeway Approach on Bay Farm Island.

The following additions and changes for the Alameda Approach were proposed:

- (a) A complete interchange was substituted for the one previously planned at the north end of Bay Farm Island Bridge.
- (b) A complete interchange has been added to the Alameda Southshore Freeway at the foot of Broadway.
- (c) The Webster Street approach to the Southshore Freeway was moved to Eighth Street and a complete interchange substituted for the partial interchange which was previously reported on.
- (d) A complete interchange was substituted for the partial one previously suggested at Atlantic and Webster Street.
- (e) East Bay Approaches \$45,490,000
Cost in 1955 Report 44,500,000

5. TOTAL PROJECT

Figure V-1 shows estimated costs of the Southern Crossing with approaches in accordance with existing Statutes. Figure V-2 shows estimated cost with revised approaches.

In the event that any of the proposed amendments are adopted, which would raise the amount to be borrowed over \$250,000,000, a toll greater than 35 cents would have to be considered for both the Bay Bridge and the Southern Crossing at the time the latter is opened to traffic.

FOLIO

THOUSANDS OF DOLLARS	
TOTAL	TOTAL
630	
660	
470	
450	
440	
	10,650
310	
450	
880	
660	
590	
	13,890
	19,960
	44,500

\$ 249,200,000

5
L CROSSINGS

NG

ESTIMATED COST OF CONSTRUCTION
WITH APPROACHES PER
ART. 2, CHAP. 2, DIV. 17, STREETS AND HIGHWAYS CODE

FOLDOUT

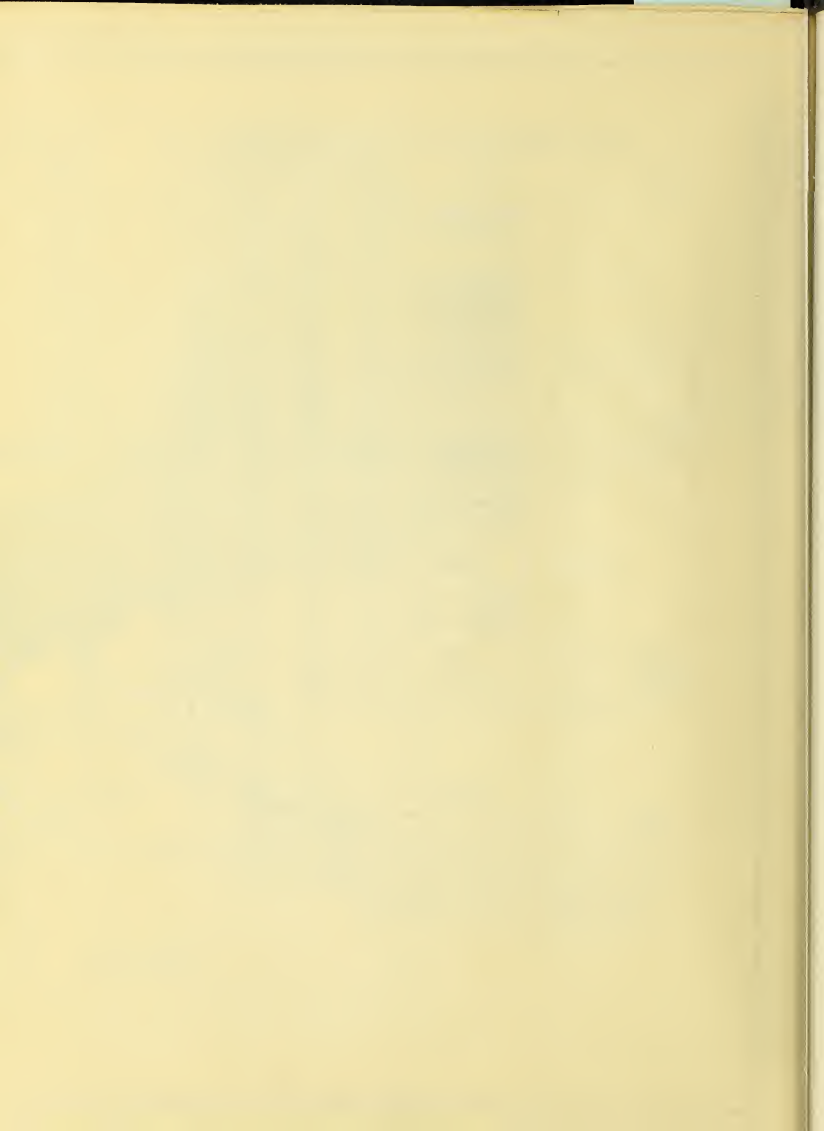
RS
OTAL
10,650
1,520
120
120
920
1,120
1,260
1,590
5,910
1,360
960
19,960

CALIFORNIA
PUBLIC WORKS
TO BAY TOLL CROSSINGS

CROSSING

ESTIMATED COSTS

WITH APPROACHES PER PROPOSED AMENDMENTS,
ASSEMBLY JOURNAL OF MARCH 23, 1955



1704

ASSEMBLY JOURNAL

[Mar. 23, 1955]

**REQUEST FOR UNANIMOUS CONSENT TO PRINT PROPOSED
AMENDMENTS TO ASSEMBLY BILL NO. 3249 IN JOURNAL**

Mr. Dolwig asked for, and was granted, unanimous consent that the following four sets of proposed amendments to Assembly Bill No. 3249 be printed in the Journal:

PROPOSED AMENDMENTS TO ASSEMBLY BILL NO. 3249

Amendments to Assembly Bill No. 3249

Amendment No. 1

In line 1 of the title of the printed bill, as amended in the Assembly on March 11, 1955, strike out "and 30652", and insert " , 30652, and 30654".

PRINTER'S NOTE—There being no 7-point strikeout type available, the material which should appear in strikeout type in the following amendment is indicated by being enclosed within brackets.

Amendment No. 2

On page 2, between lines 46 and 47, insert
"SEC. 4. Section 30654 of said code is amended to read:
30654. If the westerly terminus of the southern crossing is in the vicinity of Third and Army Streets, then the westerly approaches shall include:

(a) A freeway connection with Bayshore Freeway in the vicinity of [26th Street] *Alemany Boulevard*, with on-and-off ramps in both directions on Bayshore Freeway, together with connections to city streets in that location, and

(b) A *six-lane* freeway connection between Army Street and the Embarcadero Freeway in the vicinity of Mission Street with connections to city streets at Army Street, 23rd Street, [19th Street] *Third Street between 16th Street and 20th Street*, Main and Harrison Streets, Spear and Harrison Streets, [Howard and Mission Streets on the Embarcadero], Fourth and Brannon Streets for southbound traffic, *Third Street in the vicinity of Channel Street for northbound traffic*, and a [high] *low level fixed bridge [135 feet above China Basin] across the Channel Street waterway in the vicinity of Fourth Street*.

If the easterly terminus of the Southern Crossing is on Bay Farm Island at or in the vicinity of a point on the southwesterly shore thereof south of the intersection of Kilkenny Road and the county road connecting Bay Farm Island with the City of Alameda, the easterly approaches shall include:

(a) A freeway crossing Bay Farm Island to the bridge connecting the island with the City of Alameda, with on-and-off ramps in both directions, connecting with Kilkenny Road and the county road extending southeasterly, and also with the highway along the northerly shore of Bay Farm Island.

(b) A freeway from a point on the Bay Farm Island Freeway to a point on the Eastshore Freeway, to be constructed southeasterly from the City of Alameda.

(c) A freeway along the southerly shore of the City of Alameda from Bay Farm Island Bridge to a southerly prolongation of Main Street, thence northerly along Main Street to a point near Atlantic Avenue, and thence to the Posey Tube connecting the City of Alameda and the City of Oakland and a parallel tube which shall be constructed as part of the approaches, with on-and-off ramps connecting the freeway with the southerly end of Webster Street in the City of Alameda, and with adequate on-and-off ramps connecting the freeway and tubes with the streets in the Cities of Oakland and Alameda.

The tube parallel to the Posey Tube connecting the City of Alameda with the City of Oakland at Webster Street, and the approaches to the parallel tubes shall be constructed immediately as soon as money is obtained that may be used therefor either through the sale of revenue bonds the proceeds of which may be used for such purpose or through the refinancing by the Reconstruction Finance Corporation or any other agency."

Amendment No. 3

On page 2, line 47, strike out "SEC. 4", and insert "SEC. 5".

Amendment No. 4

On page 3, line 3, strike out "SEC. 5", and insert "SEC. 6".

Amendment No. 5

On page 3, line 9, strike out "Sec. 6", and insert "Sec. 7".

Amendments to Assembly Bill No. 3249

Amendment No. 1

In line 1 of the title of the printed bill, strike out "and 30652", and insert "30652, and 30654".

PRINTER'S NOTE—There being no 7-point strikeout type available, the material which should appear in strikeout type in the following amendment is indicated by being enclosed within brackets.

Amendment No. 2

On page 2, between lines 47 and 48, insert

"SEC. 3.5. Section 30654 of said code is amended to read:

30654. If the westerly terminus of the Southern Crossing is in the vicinity of Third and Army Streets, then the westerly approaches shall include:

(a) A freeway connection with Bayshore Freeway in the vicinity of 26th Street, with on-and-off ramps in both directions on Bayshore Freeway, together with connections to city streets in that location, and

(b) A freeway connection between Army Street and the Embarcadero Freeway in the vicinity of Mission Street with connections to city streets at Army Street, 23d Street, 19th Street, Main and Harrison Streets, Spear and Harrison Streets, Howard and Mission Streets on the Embarcadero, Fourth and Brannon Streets, and a high level bridge [135 feet] above China Basin.

If the easterly terminus of the Southern Crossing is on Bay Farm Island at or in the vicinity of a point on the southwesterly shore thereof south of the intersection of Kilkenny Road and the county road connecting Bay Farm Island with the City of Alameda, the easterly approaches shall include:

(a) A freeway crossing Bay Farm Island to the bridge connecting the island with the City of Alameda, with on-and-off ramps in both directions, and an interchange, connecting with Kilkenny Road and the county road extending southeasterly, and also with the highway along the northerly shore of Bay Farm Island.

(b) A freeway from a point on the Bay Farm Island Freeway to a point on the Eastshore Freeway, to be constructed southeasterly from the City of Alameda.

(c) A freeway along the southerly shore of the City of Alameda from Bay Farm Island Bridge to a southerly prolongation of Main Street, thence northerly along Main Street to a point near Atlantic Avenue, and thence to the Posey Tube connecting the City of Alameda and the City of Oakland and a parallel tube which shall be constructed as part of the approaches, with on-and-off ramps and an interchange connecting the freeway with the southerly end of [Webster] Eighth Street in the City of Alameda, and with adequate [on-and-off ramps or] interchanges [or both,] connecting the freeway and tubes with the streets in the Cities of Oakland and Alameda, including at the following places both such ramps and interchanges:

(1) At or near the northerly end of the bridge connecting Bay Farm Island with the City of Alameda.

(2) At or near the southerly end of the bridge connecting Bay Farm Island with the City of Alameda.

(3) At or near the intersection of Main Street and Atlantic Avenue in the City of Alameda.

(4) At or near the intersection of Atlantic Avenue and Webster Street in the City of Alameda.

The tube parallel to the Posey Tube connecting the City of Alameda with the City of Oakland at Webster Street, and the approaches to the parallel tubes shall be constructed immediately as soon as money is obtained that may be used therefor either through the sale of revenue bonds the proceeds of which may be used for such purpose or through the refinancing by the Reconstruction Finance Corporation or any other agency.

Amendments to Assembly Bill No. 3249

Amendment No. 1

In line 1 of the title of the printed bill, as amended in the Assembly on March 11, 1955, strike out "and 30652", and insert "30652, and 30654".

PRINTER'S NOTE—There being no 7-point strikeout type available, the material which should appear in strikeout type in the following amendment is indicated by being enclosed within brackets.

Amendment No. 2

On page 2, between lines 46 and 47, insert

"Sec. 4. Section 30654 of said code is amended to read:
30654. If the westerly terminus of the Southern Crossing is in the vicinity of Third and Army Streets, then the westerly approaches shall include:

(a) A freeway connection with Bayshore Freeway in the vicinity of [26th Street] Alemany Boulevard, with on-and-off ramps in both directions on Bayshore Freeway, together with connections to city streets in that location, or such portion thereof running southeasterly from the vicinity of Army Street as can be constructed for the same cost as would apply to a freeway connection with Bayshore Freeway in the vicinity of 26th Street, and

(b) A freeway connection between Army Street and the Embarcadero Freeway in the vicinity of Mission Street with connections to city streets at Army Street, 23rd Street, [10th Street] Third Street between 16th Street and 20th Street, Main and Harrison Streets, Spear and Harrison Streets, or in lieu of the connections at Harrison Street, Howard and Mission Streets on the Embarcadero, Fourth and Brannan Streets for southbound traffic, Third Street in the vicinity of Channel Street for northbound traffic, and a high level bridge 135 feet above China Basin. If the easterly terminus of the Southern Crossing is on Bay Farm Island at or in the vicinity of a point on the southwesterly shore thereof south of the intersection of Kilkenny Road and the county road connecting Bay Farm Island with the City of Alameda, the easterly approaches shall include:

(a) A freeway crossing Bay Farm Island to the bridge connecting the island with the City of Alameda, with on-and-off ramps in both directions, connecting with Kilkenny Road and the county road extending southeasterly, and also with the highway along the northerly shore of Bay Farm Island.

(b) A freeway from a point on the Bay Farm Island Freeway to a point on the Eastshore Freeway, to be constructed southeasterly from the City of Alameda.

(c) A freeway along the southerly shore of the City of Alameda from Bay Farm Island Bridge to a southerly prolongation of Main Street, thence northerly along Main Street to a point near Atlantic Avenue, and thence to the Posey Tube connecting the City of Alameda and the City of Oakland and a parallel tube which shall be constructed as part of the approaches, with on-and-off ramps connecting the freeway with the southerly end of Webster Street in the City of Alameda, and with adequate on-and-off ramps connecting the freeway and tubes with the streets in the Cities of Oakland and Alameda.

The tube parallel to the Posey Tube connecting the City of Alameda with the City of Oakland at Webster Street, and the approaches to the parallel tubes shall be constructed immediately as soon as money is obtained that may be used therefor either through the sale of revenue bonds the proceeds of which may be used for such purpose or through the refinancing by the Reconstruction Finance Corporation or any other agency."

Amendment No. 3

On page 2, line 47, strike out "Sec. 4", and insert "Sec. 5".

Amendment No. 4

On page 3, line 8, strike out "Sec. 5", and insert "Sec. 6".

Amendment No. 5

On page 3, line 9, strike out "Sec. 6", and insert "Sec. 7".

Amendments to Assembly Bill No. 3249

Amendment No. 1

In line 2 of the title of the printed bill, after "30608," insert "30654.1."

Amendment No. 2

On page 2, between lines 47 and 48, insert

"Sec. 4. Section 30654.1 is added to said code, to read:
30654.1. If the easterly terminus of the Southern Crossing is as described in Section 30654 of the Streets and Highways Code, the easterly approaches of said crossing shall include on-and-off ramps and an interchange connecting the freeway along the southerly shore of the City of Alameda with a southerly prolongation of Broadway Street."

Amendment No. 3

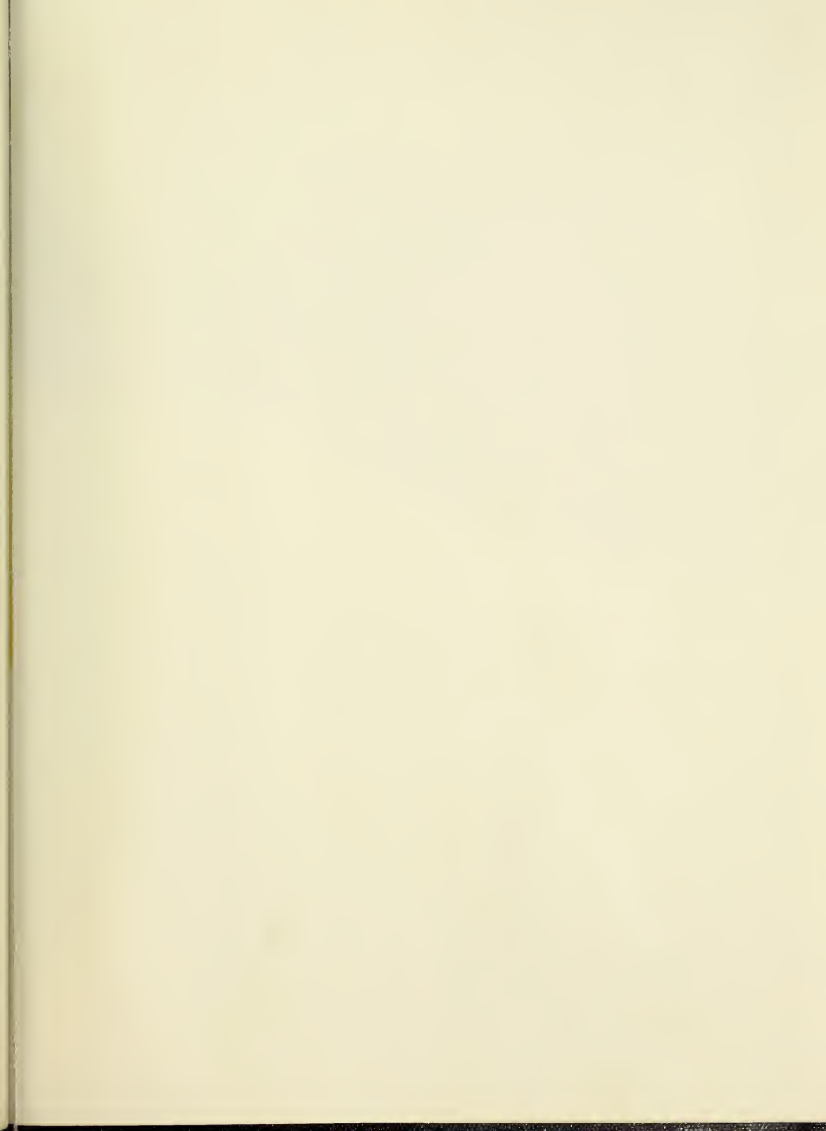
On page 2, line 48, strike out "Sec. 4", and insert "Sec. 5".

Amendment No. 4

On page 3, line 4, strike out "Sec. 5", and insert "Sec. 6".

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